

ABSTRACT

Distribution network commonly used by the public is in the form of pure sinusoidal voltage signal 220-240 V with a frequency of 50-60 Hz. Normally the distribution network is used to activate electronic equipment that supports daily activities. However, the use of the device on the distribution signal causes charges resulting in the fundamental signal of the distribution network being distorted. Distortion or deviation of distribution network signal is an event of change in the shape of fundamental signal waves caused by harmonic currents that are instigated by loads so that there is an increase in system current decrease, power quality and enlarge power losses. Harmonic signals are caused by the presence of non-linear load components on the device. Single-tuned shunt passive filters are usually a solution to reduce harmonics in industrial equipment so that band-pass filter models are designed to reduce harmonic size from loads of 320 W with a power factor of 0.7 using a series of filters with capacitor specifications of 15 μ F and 70mH inductors mounted parallel to the system. The addition of filters proved able to work on the selected harmonic order range and change the signal form of the distribution network to sinusoidal and reduce the amount of harmonic flow of the individual by a maximum of 96% in the 4th order. The use of single-tuned passive filters is considered effective in reducing harmonics very well with a reduction in total harmonic current by 74.01% and the return of the signal form of the sinusoidal return distribution network.

Keywords: *System, Harmonics, Filters.*